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DISCUSSION DOCUMENT

**MANAGING THE COMPETITIVE TRANSITION OF THE COFFEE SECTOR
IN CENTRAL AMERICA**

Prepared for the Regional Workshop:
**THE COFFEE CRISIS AND ITS IMPACT IN CENTRAL AMERICA:
SITUATION AND LINES OF ACTION**

Antigua, Guatemala
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PREFACE

This discussion paper is a joint effort of the Inter-American Development Bank (IADB), the World Bank (WB), and the United States Agency for International Development (USAID). This document was prepared as the background for discussion of the main issues facing the coffee sector in Central America in a regional workshop, “The Coffee Crisis and its Impact in Central America: Situation and Lines of Action,” to be held in Antigua, Guatemala from April 3 to April 5, 2002.

This initiative is part of the response to requests by several Central America governments for assistance in addressing the effects that the current crisis is having on their economies. The discussion paper attempts to define the nature and magnitude of the crisis and delineate possible strategies to ameliorate its effects within the framework of a competitive transition for the sector and development of the rural economy more broadly. The discussion paper is intended as an input to the discussion in the workshop and does not represent a statement of policy of the three sponsoring institutions.

The paper is divided into six sections. Section I describes the nature of the crisis and its magnitude. Section II examines ways to improve the quality of Central American coffee, as a strategic competitive response to the crisis. Section III focuses on market opportunities and marketing management issues to be considered by coffee growers. Section IV discusses diversification programs as possible alternatives for non-competitive coffee farmers. Section V centers on environmental issues of coffee production. Finally, Section VI examines the role of public and private institutions: steps they can take to facilitate the competitive transformation of the coffee sector in the region and efforts to lessen the negative social impacts of the crisis.

EXECUTIVE SUMMARY

The coffee-producing nations of Central America are at a crossroads. Coffee prices are at record lows, global over-production has led to accumulation of inventories, and competition is intensifying. Prospects for price recovery in the 2002/03 season and the near future are not encouraging. Indeed, the current crisis appears to be structural in nature, and is shaped by changes in demand as well as supply. Meanwhile, unemployment in the sector has soared and wages have plummeted, and export revenues have dramatically decreased. The situation is especially critical because the majority of coffee producers are smallholders living in remote rural areas, who depend heavily on the cash income from their own harvest and temporary picking work for survival. A crisis in the sector creates social imbalances, accelerated migration to urban areas, and instability. At both the micro and macro level, Central American economies and societies are being severely affected.

Coffee growers in the region are facing a new market structure, and new challenges. All these factors call for new strategies, the centerpiece of which must be sustainable economic development of the rural economy.

The region's competitive advantage in the coffee market lies in having the adequate agroecological conditions to produce high quality coffees. To manage the competitive transition of the coffee sector in Central America, this paper advocates two potential lines of action over the medium to long term:

- Enhancing coffee quality, efficiency, and sustainability in the regions with comparative advantage (specifically, the zones with adequate altitude); developing value added; and pursuing effective promotion and marketing; and
- Promoting diversification into other agricultural and non-agricultural alternatives, for regions without potential for producing quality coffee.

Social vulnerability also must be reduced, in both the short and long term. To assist coffee producers, workers, and their families, better social protection is needed (particularly short-term actions such as social safety nets and food security networks). To protect small coffee producers who are vulnerable to price shifts, price risk insurance mechanisms and similar instruments need to be developed and adopted.

These lines of action need to be supported with appropriate and effective public policy and investment instruments, private investment, and backing from civil society

To be effective, a quality enhancement strategy would need to be comprehensive, and be applied throughout the entire coffee production chain. Special focus should be devoted to three areas:

- Identifying and supporting the geographic areas with suitable agroecological conditions for quality production;
- Guaranteeing the production of quality beans, by designing and implementing broad coffee bean management and programs aimed at reducing defects; and
- Pursuing value-added and marketing strategies aimed at building partnerships and long-term market links, receiving higher premiums for quality, and accessing high revenue segments of the market.

These strategies require sector-wide interventions focusing on targeted programs that intervene at critical points. Some actions for Central American players---public institutions and organizations---might include:

- Adopting industry-wide norms and standards for quality;
- Identifying the high quality coffee areas and supporting them with incentives; and
- Reviewing trade regimes, and including coffee in trade negotiations (especially in new markets and internal Latin American markets).

Any economically sustainable diversification strategy should provide alternatives for those growers in Central American countries who will not be competitive in coffee, but would allow them to continue farming as an agricultural enterprise. These strategies should consider secondary goals such as:

- Employing displaced coffee labor;
- Being self-sustaining when projects end, so that producers do not return to coffee production when prices improve; and
- Promoting profitable and sustainable land use.

Developing a successful strategy for agricultural diversification requires a systems approach, covering both agricultural and business constraints, along with environmental and social issues at the same time. Factors to be addressed should include reliable agricultural support services; research and extension in production, marketing, and promotion; credit; infrastructure; technical assistance and training in business and risk management; and market intelligence and regulation.

Finally, a sustainable strategy for the transition of the coffee sector must protect the environment. Sound environmental management can enhance coffee quality and productivity, profitability, competitiveness, and sustainability of coffee systems. In addition, it maintains land productivity and provides value-added market opportunities (such as conservation coffees and environmental services). At minimum, any quality and diversification strategies to be implemented should not have negative impacts on the environment, especially on biodiversity and water use. More positively, strategies must work with environmental programs, exploring the potential positive externalities between environmental sustainability and actions to promote coffee quality enhancement and diversification. Similarly, social impacts of any strategies should be considered. Active partnerships with NGOs, as well as work with research and extension centers with expertise and experience in environmental management, can serve these ends.

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ABBREVIATIONS

ANACAFE	<i>Asociación Nacional del Café</i>
CATIE	<i>Centro de Agricultura Tropical, Investigación y Enseñanza</i>
CIMS	<i>Centro de Inteligencia Sobre Mercados Sostenibles</i>
CIRAD	<i>Centre de Coopération Internationale e Recherche Agronomique pour le Développement</i>
G & S	Grades and Standards
GIO	Geographic Indications of Origin
IADB	Inter-American Development Bank
ICAFE	<i>Instituto del Café de Costa Rica</i>
IHCAFE	Instituto Hondureño del Café
IICA	<i>Instituto Interamericano para la Cooperación en Agricultura</i>
INCAE	<i>Instituto Centroamericano de Administración de Empresas</i>
MIS	Market Information Systems
PROMECAFE	<i>Programa Cooperativo Regional para el Desarrollo Tecnológico de la Caficultura en Centroamérica, República Dominicana y Jamaica</i>
SCAA	Specialty Coffee Association of America
USAID	United States Agency for International Development
WB	World Bank
WTO	World Trade Organization

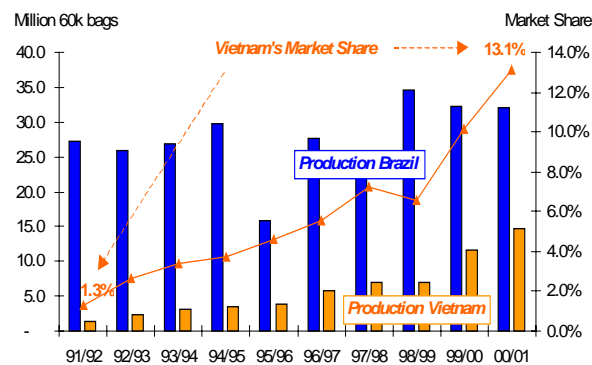
I. THE NATURE AND MAGNITUDE OF THE COFFEE CRISIS AND ITS IMPACT ON CENTRAL AMERICA

Over the past five years, the world coffee market has undergone important changes in the supply side, which reflects a steady increase in world production and export levels. The current crisis in prices is not only part of a cyclical phenomenon; but also, it is a direct consequence of the new structure of the market, which is exacerbating the problem for Central American producers.

Structural Changes in the World Coffee Market

During 2000 and 2001, worldwide oversupply caused coffee prices to drop to their lowest levels in 30 years---or to a 100-year low, if adjusted for inflation (see figure I-1). Coffee prices have plummeted below the cost of production for many coffee producers, causing financial and social hardships to farmers and laborers.

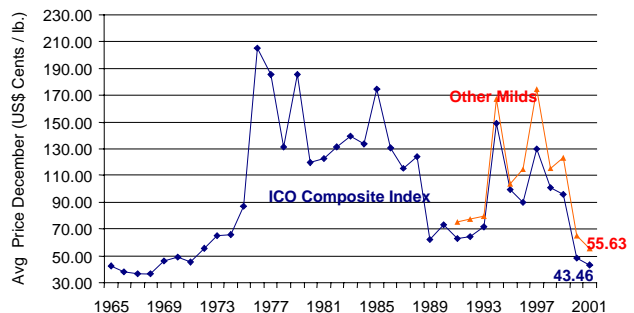
Figure I-2
Annual Production and Market Share: Brazil and Vietnam



Source: Own calculations, with information from ICO, 2002

By the end of the 1990s, however, Brazilian post-frost replanting---freed from government constraints on tree density and planting techniques, as well as the opening of new production areas---has increased production and, hence, increased world supply (see figure I-3). In addition, new investments in Vietnam and increasing production from other traditional producing countries led to a substantial coffee surplus.

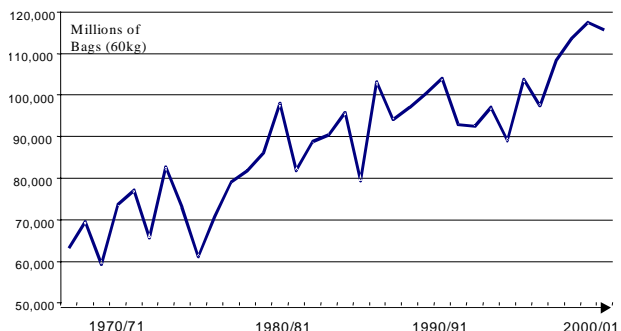
Figure I-1: Average Coffee Prices



Source: International Coffee Organization (ICO), 2002

During the 1990s, prices of coffee were mainly affected by shifts in Brazilian production (caused mainly by frosts), subsequent adjustments by coffee suppliers responding to price shifts, and a slow but steady expansion of coffee production in other countries, especially Vietnam (see figure I-2). This period contrasted to a generally downward trend in prices from highs in the mid-1970s. The loss of about 13 million bags of Brazilian production in the mid-1990s pushed prices to a high level.

Figure I-3: World's Total Coffee Production



Source: Own calculations, with information from OIC, 2002

Total current production of green coffee is about 115 million bags (60 kilo net). This exceeds consumption of about 105 million bags (80 million in importing countries and 25 million in

producing countries). Over-production has led to the accumulation of inventories in producing and consuming countries and the drop in world prices.

Apart from over-supply, two other principal factors are underlying the current crisis: structural changes in demand, and changes in the nature of the supply of quality coffee from Brazil and Vietnam.

Changes in demand

Overall, world demand has recovered from the small drop that resulted from the price increase in 1994/95. As a result of economic liberalization and growth in emerging countries, notably in Eastern Europe, parts of Asia, and Latin America (especially Brazil), world demand has reached about 105 million bags. This world total masks a number of trends:

- Aggregate demand in the major importing countries is growing slowly, if at all. This suggests that increases in the high quality end of the market are being partly offset by losses elsewhere. Meanwhile, new non-traditional markets are emerging and growing quickly, driven by the availability of cheap coffees in soluble form.
- Roasters have learned to increase the absorption of natural and robusta coffees by such processes as steaming to remove the harshness of taste.
- Roasters have learned to work with lower working stocks. This has increased the requirements on the logistical capabilities on suppliers. This, in turn, has favored large trading companies, and has led to consolidation of the supply chain in fewer major traders.
- Roasters have become more flexible in their ability to make short-term switches between coffee types.
- The consolidation of roasters in periods of oversupply has led to a situation where prices at the retail level hardly reflect the reductions in green coffee prices in the world markets.
- A small but viable segment of the market has emerged that focuses on quality and product differentiation (specialty and gourmet coffees).

In addition to these trends, income effects are proving to be a significant factor in coffee consumption. Consumption in northern Europe, particularly in Germany, is stagnant, but is increasing somewhat in southern Europe, and growing in much of Eastern Europe. However, the increase in consumption in Eastern Europe and in parts of Asia recovering from economic problems is being driven by the high availability of cheap robustas, which have allowed roasters to make a product available at affordable prices. In Brazil, roasters have taken an opposite approach, concentrating on labeling and quality in the domestic market. This has allowed Brazil to increase domestic demand and become the world's second largest consumer. This example is relevant for a Central American strategy.

Changes in quality

While supply has expanded, the quality of green coffee in some parts of the world has also been improving. Higher quality beans from Brazil, derived from better washing capabilities and quality controls, are intensifying the competition against "Extra Hard," "Prime," and "Extra Prime" coffees from Central America. Improvements in quality in Vietnam---as evidenced by the

favorable grading results from the coffee futures markets---are allowing roasters to use more of these coffees.

The projections for the 2002/03 crop season are not encouraging. With demand growing slowly and global production still at high levels, most analysts predict that coffee price recovery is likely to be slow, at least for the near term. This threatens the sustainability of coffee production.

The Impact of the Recent Coffee Crisis on Central America

Low coffee prices are causing unemployment to reach critical levels in Central America. In the last two crop seasons, seasonal employment has decreased by more than 20 percent, while permanent employment has plummeted by more than 50 percent (see table I-1). More than half the permanent labor force is now working at less than half capacity. Wages have also plummeted as farms have suffered lower coffee revenues and the supply of labor has swelled through unemployment.

*Table I-1. Decline in Employment in the Central American Coffee Sector, 2000-2002
(thousands of workers)**

<i>Worker / Crop year</i>	<i>2000/ 2001</i>	<i>2001/ 2002</i>	<i>Change (%)</i>
<i>Seasonal</i>	1,700	1,350	-21%
<i>Permanent</i>	350	160	-54%

* In Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica

Source: IADB/USAID/WB studies

The situation is especially critical because, unlike other crops, the majority of coffee producers are smallholders living in remote rural areas, who heavily depend on their own harvest and extra cash from temporary picking work. These growers depend on this cash income to pay for food and other essential items such as school fees and health care, and they have no cash reserves on which to draw from in hard times. A crisis in the sector creates social imbalances, a general downturn in the rural economy, accelerated migration to urban areas, and instability.

At the macroeconomic level, national governments and banks are also affected by the loss of trade-generated cash. Central American countries have suffered a 44 percent decline in revenue from coffee exports in one year (see table I-2). Export revenues from coffee dropped from US\$1.7 billion to US\$938 from crop year 1999/2000 to 2000/2001, and are estimated to fall further to about US\$700 million in 2001/2002. The decrease in exports hurts the balance of payments and significantly affects overall economic activity. The coffee sector debt and past due loans hamper the financial sector, limiting banking activity and financing to other economic sectors.

**Table I-2. Decline in Coffee Export Revenues,
2000-2002
(US\$ million)**

<i>Country / Crop year</i>	<i>2000/ 2001</i>	<i>2001/ 2002</i>	<i>Change (%)</i>
Guatemala	598	400	-38%
Honduras	345	167	-33%
El Salvador	276	108	-61%
Nicaragua	170	85	-50%
Costa Rica	289	178	-52%
Total	1,678	938	-44%

Source: IDB/USAID/WB studies

It appears that these changes in the structure of the world coffee market are not transitional. Accordingly, the impact of the crisis in Central America could be long lasting, if proper actions are not taken. The remainder of this document presents a framework for initiatives to cope with the crisis and facilitate the competitive transformation of the sectors.

II. IMPROVING THE QUALITY OF CENTRAL AMERICAN COFFEE

The structural nature of the coffee crisis, the relatively high importance of the sector in Central America, and the impact of the crisis in the poverty of hundreds of thousands of families in the rural areas makes development of the rural economy the centerpiece of strategies to overcome the crisis.

Against the backdrop of rural economic development, and given the competitive advantages of the region, the competitive transition of Central American coffee falls into two potential lines of action:

- Supporting *the regions with the potential to produce quality coffee* (specifically, the zones with adequate altitude) to effectively generate, preserve, and extend this quality ; and
- Supporting *the regions without potential to produce quality coffee* to diversify into other areas, with the goal of reaching economic sustainability in the medium to long run.

These lines of action need to be supported with appropriate promotion and marketing, and effective public policy and investment instruments, private investment, and backing from civil society and NGOs.

A strategy that supports quality improvements is key for Central America for several reasons. First and foremost, because of the favorable agroecological conditions of the Central American highlands, the region has a comparative advantage in this segment of the coffee market. Second, consistent quality coffee fetches a price premium. Finally, improvements in quality can also drive increases in consumption.

Improvements in quality offer other benefits as well. Increasing quality can help national coffee sellers develop and strengthen their long-term relationships with exporters, importers, and retailers, and increase their ability to negotiate prices, including premiums for quality. This will

empower national coffee sellers. Improving quality can also help national coffee sellers develop direct links and access to international markets.

Quality as an Option for Central America

Central American countries have the necessary elements to compete in the high quality segments of the coffee market. Many areas have ideal agroecological conditions (altitude, agroclimate, and soil conditions). The region has a tradition of producing coffee, and a recent and growing experience in the differentiation of coffee based on quality. Finally, it has production structures in place, including an abundance of labor.

For Central American countries, developing an economically sustainable strategy focused on quality requires several steps:

- *Understanding and evaluating the quality of coffee* in terms of its attributes and market preference;
- *Identifying the key problems* that affect quality and its consistency throughout the entire production chain;
- *Defining the alternatives for overcoming these problems*; and
- *Determining public policy and investment instruments and private investment* that will facilitate the adoption of such alternatives.

Understanding and evaluating quality

Quality is an attribute that has a specific technical meaning, which can be measured and evaluated. Ultimately, quality is reflected through the organoleptic characteristics of coffee (that is, the taste and smell) and identified and measured by professional “cupping” (sampling by taste and smell).

The agroecological conditions in the coffee fields directly determine the quality of the harvested bean. Additionally, defects from production and processing have a direct effect on the quality of the green bean.

The altitude of the crop is the criteria of quality most recognized by coffee buyers and the easiest to identify and measure. Altitude is directly correlated with the acidity of coffee. In general, fields above 1,200 meters sea level have a higher potential to produce high quality coffee (including gourmet and specialty coffee), while those located below 800 meters lack the potential. “Extra Hard,” “Prime,” and “Extra Prime” beans, produced between 800 and 1,200 meters can achieve a high quality and could potentially be marketed in the specialty coffee segment. Achieving and maintaining good quality for high altitude coffee depends on processing the coffee without defects, to effectively differentiate it from similar coffees produced in Mexico and Brazil.

Coffee defects are imperfections that affect the natural characteristics of the bean. They are detected visually and/or through cupping. Defects may arise because of plantation conditions (fungi, viruses, and insects); harvesting (using unripe or overripe cherries, or introducing molds

or foreign matter); prolonged storage or transportation delays (over-fermentation), or processing (over-fermentation, pollution, improper storage, improper drying); insufficient air circulation; or improper setting of equipment, among others).

Evaluating quality

There are two basic methods to evaluate coffee based on its quality: physical evaluation of the bean, and cupping. Cupping is the most comprehensive method.

The physical evaluation consists in the classification of coffee based on its number of physical defects. The most used methods are the SCAA and Brazil/New York.*

The evaluation of physical defects is complemented by professional cupping, performed by technical experts who value the organoleptic characteristics of coffee (fragrance and aroma, body, acidity, flavor, aftertaste). The assigned grade (from 50 to 100 points) reflects the sensory characteristics of coffee.

Physical evaluation and cupping are procedures performed by coffee importers on samples that they receive before shipment. One key element to improving and maintaining quality is developing the capacity to evaluate coffee with the same standards as the buyers. In addition to this, assuring commercial consistency in lots and confidence in delivery, are essential to developing long-term relationships with buyers.

Improving Quality

A strategy of improving quality entails managing the entire coffee productive process in an integral way, from the coffee plantation and harvesting to the storage and shipping of green coffee. Starting from the necessary conditions in primary production (that is, planting in ideal agroecological conditions, particularly altitude), producers must manage a variety of elements to avoid defects and maintain quality during the production and milling processes.

Key elements in primary production

- *Adequately preparing the harvest.* Preparation begins with the adequate care of the plantation, diligent plant renovation and maintenance, and efficient pest and disease control. Contributions from research and extension institutions are essential in the identification of varieties for quality production (such as Typica and Bourbon, among others), adequate planting densities, agronomic and cultural practices, and in the application of harvesting and pest/disease control methods.

* The “SCAA Green Arabica Coffee Classification System” classifies coffee in “Exchange Coffee”, “Premium Coffee” and “Specialty Coffee”, based on the number of primary and secondary defects. A coffee with more than eight defects (up to 23, measured in 300-gram samples) is “Exchange Coffee” (quality typically traded in the “C” Market). The “Premium” classification is assigned to lots with less than eight full defects, and the “Specialty” grade to lots with a maximum of five defects. Performing physical evaluations is key in improving quality to reach a desired classification.

- *Supporting incentives for harvesting quality coffee.* It is crucial to establish incentives to encourage producers to harvest cherries in their ideal maturity stage and to avoid mixing in foreign matter during harvesting. Mechanisms should be put in place at the coffee collecting centers to measure quality and compensate the producer for the delivery of quality coffee. An adequate compensation scheme is one that recognizes quality differences and effectively transmits prices throughout the entire coffee production chain, from the final consumer to the producer.
- *Improving transport.* A large number of high-altitude coffee plantations are located in remote areas, with poor road infrastructure or no roads at all---and very limited transportation. This results in an inefficient transport of the cherry coffee (or coffee coming from wet mills), which severely affects the price received by the producer and contributes to the deterioration of quality. It is not unusual to find good quality cherries damaged by fermentation because of transportation delays. The improvement of the transportation infrastructure is vital. However, it may be difficult to justify investment based on a simple cost-benefits analysis because of the remoteness of these areas.
- *Strengthening cooperative approaches.* Supporting producers (especially the small ones) in developing organizational and cooperative approaches will help overcome many managerial problems and improve quality. For example, cooperatives can help producers work with quality standards and guidelines in harvesting, and empower producers in price negotiations. Supporting activities can incorporate elements of rural development, such as education and health services.
- *Supporting differentiated coffee (such as Organic, Fair Trade, and Eco-friendly).* These coffee segments are relatively smaller in size and of limited access. Maintaining quality is an essential component for their success. Supporting necessary extension, training and certification of these coffees can increase producers' income (because these segments carry a price premium and are experiencing strong market demand). They can also generate significant externalities, such as improving environmental management (for example, resistance to drought and erosion) and promoting community-level organizational support. Cultivating Organic and Eco-friendly coffees can provide many of the necessary training steps in establishing and maintaining international level standards, such as field-to-consumer traceability, farm inputs accounting, and residue-free harvests.

Key elements in coffee milling

Mills can become pivotal elements for introducing the total quality concept throughout the entire production chain, from the preparation of the fields to the establishment of long-term sale relations to reach the international markets.

- *Minimizing defects in the milling.* The inadequate processing of coffee in the wet and dry mills can affect the quality of previous stages. For example, equipment malfunctions can damage the beans. Inadequate drying can alter the flavor and spread molds. Overheating of the ovens, inappropriate storage, and overfermentation also affect quality. Equipment and procedures in the mills should be maintained to protect and enhance quality. Finally, coffee

must be delivered under conditions of adequate humidity, in accordance with the agreements with the exporter.

- *Cupping.* Adequate tools must be used to measure and evaluate the “cup-value” of coffee samples. This requires establishing adequate cupping laboratories in the mills. Laboratories need to receive institutional support for the training and certification of expert cuppers, including setting up groups of master cuppers, who can train other cuppers.
- *Business development.* The transformation of the mill from a coffee-processing center to a business enterprise will result in many positive effects. Correcting the over-capacity of mills can become part of this transformation. There are examples of producers and millers groups that, working in cooperatives, have introduced improvements in production processes and directly accessed new markets. Similarly, entrepreneurs have developed successful businesses supported with good innovative management tools and technologies such as the Internet.
- *Strengthening marketing.* Mills that improve the quality of their coffee potentially develop better negotiation capacities with exporters. For example, they can enter into contracts that specifically recognize and reward quality or add flexibility to receive higher compensations for quality improvements. Improvements in quality and consistency will help increase the confidence of exporters and buyers in general to negotiate long-term contacts with millers.

Public policy and incentives are important elements in improving the quality and competitiveness of the coffee sector and easing diversification strategies. These elements are discussed further in this study, especially in Section VI.

III. MARKETING AND VALUE-ADDED ISSUES FOR CENTRAL AMERICAN COFFEES

By differentiating and increasing the quality of their coffees, Central America has the potential to improve their overall competitive position in international markets, through enhanced reputation, quality orientation, and income. To be able to enter and develop the emerging higher revenue segments of the market with differentiated coffees requires the development of value-added strategies and marketing, to be able to distinguish Central American coffees from those of other parts of the world. Before designing such strategies for coffee, it is important to understand the characteristics and trends of consuming markets.

Macro Trends in Established Consumer Markets

Quality and value will continue their emergence as competitive standards, against the backdrop of continued but more modest prosperity in the European Union and the United States. In these markets, post-war baby boomers will drive growing demand for specialized products. Mass-market brands are particularly vulnerable to intense competition. Quality coffees---although not necessarily only specialty coffees---will likely continue their strong growth trend, while standard brands remain stagnant. These standards, commercial brands will likely retain the lion's share of the market, based on their price and promotion. However, out-of-home consumption, food service, and private-label programs offer alternative and increasingly larger channels of distribution that have much lower barriers to entry. Over the next ten years, these segments are expected to capture nearly two-thirds of new consumer food spending in the United States.

Another source of the drive for quality are elevated food safety concerns, particularly in the United States and Europe (Giovannucci 2000). This implies a fundamental shift in the role of Grades and Standards (G&S) from merely reducing transaction costs to serving as strategic tools for market penetration. This shift is furthered by changes in the regulatory, business, and consumer environment (Giovannucci and Reardon 1999). Several of the "sustainable" coffees intrinsically incorporate improved G&S in their certification standards and also appear to meet consumers demand for specialized and "safe" products. They should therefore be considered as a potential part of any producing country's strategy.

The growing interest in sustainable coffees---defined generally as those whose production is certified by a third party to combine economic, social and environmental benefits---has fueled their dramatic growth in recent years (see definitions and characteristics, Annex A). Nevertheless, the markets for these coffees---primarily organic, fair trade, and shade-grown---should be approached with caution. They are still limited in size and can require considerable farmer effort to adapt to their more stringent requirements (Giovannucci 2001). Other specialty or differentiated coffees, such as gourmet, appellation, and single estate, also show considerable potential and, in some cases, promise considerably larger markets.

To both assess and access markets, quality information---and the ability to make use of it---is needed. Business skills to manage such transactions as contracts, shipping, and credit are also vital. The single most important factor to enable small businesses and smallholders to reach markets is the institutional strengthening of associations and cooperatives. They are *the delivery mechanism* by which coffee producers/sellers can:

- Better manage their affairs as businesses;
- Negotiate with coffee buyers, transporters, processors, and input sellers;
- Aggregate larger quantities and lower costs of marketing;
- Negotiate and manage larger financial transactions and access global commodity markets; and
- Facilitate efficient relations and transactions with NGOs, international organizations, extension services, and certifying agencies.

Market Differentiation

Market differentiation can be a valuable tool with which to earn higher revenues and achieve superior market reputation. The differentiated markets can and often do overlap. They consist of various types of coffees that are not the usually traded as commodities, for example (see Annex A):

- Geographic Indications of Origin (appellations);
- Gourmet;
- Organic;
- Fair Trade; and
- Eco-friendly or shade-grown.

Differentiated markets are important because of their high growth rates, as well as their ability to command a price premium. Moreover, they can access market niches that are competitively

different, and often involve direct relationship with buyers. Moreover, they address global social and environmental concerns, and have the added advantage of provide positive externalities in the field, such as biodiversity conservation. The comparative characteristics of differentiated coffee markets are summarized in table III-1.

Table III-1. A Comparison of Conventional and Differentiated Coffee Markets

Conventional	Differentiated
–International price volatility	–Consistently higher prices
–Reward for quality and price	–Reward for quality and process
–Easy market access	–Limited market access
–Intense competition	–Moderate competition
–Extension support from governments	–Limited extension support
–Broad market size	–Very limited market size

Source: Elaborated by D. Giovannucci, World Bank.

Increasing Value-added

For decades, most countries have passively accepted their role as a supplier of green beans in world coffee markets. Meanwhile, on the demand side of the market, roasters have shown a remarkable capacity to add enormous value to green beans, by targeting increasingly segmented and fragmented consumer markets. As a result, multinationals and firms in consuming nations have captured huge downstream margins. Meanwhile, producers' share of total value has declined considerably: from approximately 30 percent to 10 percent in the last two decades. To increase their share of total value and to add value, producers need to simultaneously develop downstream supply chain linkages and pursue promotion strategies that feature their coffee's comparative advantages. Some process-oriented approaches include:

Working with retailers. Certain countries can work directly with retailers. Indeed, retailers' ability to develop private labels and otherwise bypass the traditional trading channels is fast emerging as a critical competitive factor. Such labels are taking a fast-increasing share of grocery sales, even at the high-end of the market. Moreover, they do not require costly market entries or direct competition with current buyers. However, only the more organized producer groups and associations will have the capacity to deal with them directly.

Cutting out the middleman. Among the various methods to increase the overall share of value added, one of the simplest and most frequently discussed is the reduction of intermediation---or cutting out the middleman. While this has obvious appeal, inexperienced farmers or farmer groups should consider it with caution. Middlemen, although often derided, have been shown to perform valuable and sometimes very cost-effective functions by providing credit, agglomerating volume, finding buyers, and providing transport---all with considerably more efficiency and tolerance for risk than many farmers.

Capturing product-oriented value by marketing processed or transformed coffee (for example, soluble or roast and grind) can require considerable expertise and investment, particularly if the target market is overseas. Process-oriented value (Organic or Eco-certification) can be less costly and in the long run has the distinct advantage of providing a higher percentage of benefits

and income directly to the producer. Whether a coffee is roasted domestically or overseas rarely affects the price the producer receives. Another producer-oriented way of capturing value is to exploit Geographic Indications of Origin (GIO) or appellations that distinctly connect quality/value to a particular and specific origin.

Brand recognition is a valuable asset in an increasingly competitive coffee market. Brands are essentially a symbolic embodiment of reputation. They require long-term investment and a strong commitment from the stakeholders involved in developing them. For producers that feature a coffees with GIO, this means a quality commitment throughout the appellation; this is necessarily born of a strong organizational structure that provides adequate information and technical training to the farmers in that area. Appellation-based brands initially require considerable work to develop (for example, terrain analysis, stakeholder negotiations, and legal definitions and regulations). However, in the long run, they may also be more beneficial to the local farmers who share ownership. This may make them more sustainable, given that invented labels, unlike a specific terrain, are easily copied and, like fashions, can come and go.

None of these process-oriented approaches can be replicated with cookie cutter simplicity because they require adaptation in different geographical regions. Their benefits are best reaped by first working with those farmers that require only modest adaptation, notably well-known GIOs or organized organic growers. Then, more complex incentives can be structured to encourage conventional producers. This conservative sequencing is also relevant because it correlates to the gradual development of a market that, while fast growing, is still relatively quite small.

However, market access is not the most important basis for deciding to adopt improved or differentiated production methods. Indeed, it is vital that promotional policies focus on the local benefits---rather than the price premium or market benefits, which may be evanescent in small markets. Organic, Fair Trade, and shade-grown coffee can offer considerable environmental, social, and even health benefits to growers and their communities.

In addition to improved sustainability, farmers in some areas could also benefit by combining shade-grown organic coffee production with eco-tourism. These natural production areas have been proven to draw increased numbers of birds and wildlife. In some rural areas, eco-tourism can be more economically important than agriculture. Coffee-growing areas in El Salvador, Mexico, and Colombia are already associated with national parks. A European trend that has spread to other parts of the world, including Costa Rica, is agro-tourism. Diversified and well-managed coffee farms lend themselves to this concept and could be important tourism destinations.

Promotional Strategies for Coffee

The traditional marketing efforts of most small countries are often a waste of resources. Promotions that are designed to impact on consumer decisions in foreign target markets are simply unwise without multi-year million dollar budgets and access to distribution channels (e-commerce may be an exception). Given limited promotional resources and the changing levels of competition, marketing efforts must be judiciously targeted and professionally developed. The

most efficient approaches focus on relationships such as roaster visits and trade shows, rather than on untargeted advertising.

Promotional strategies can be linked and supported with e-trade and business development, internal consumption campaigns, and Market Information Systems (MIS).

E-trade and auctions

The Internet offers novel opportunities for marketing coffee directly to roasters, and in some cases, even directly to consumers. Internet-based coffee auctions have been tested for three years with some notable success, albeit on a very limited scale. Businesses like Comdaq are providing solution platforms for developing coffee e-commerce. The experience of the Specialty Coffee Association of America (SCAA) is also useful and available to producers. Direct mail and targeted promotion strategies are other ways of reaching far downstream, but require market partners since they are much more costly and difficult to manage, especially small order fulfillment.

The Internet can be used for more than just traditional marketing. The ability to share new forms of information can expand the possibilities to include support systems for land use monitoring, certification, and GIOS or Appellation. One pilot program in Peru is successfully testing these possibilities online. Their mapping system serves as a prototype for the SCAA denomination of origin/marketing partners project.

Increasing domestic promotion and consumption

One of the opportunities in a low price market is the development of domestic markets. With adequate stimulus, the results can be considerable. A prime example is Brazil. Domestic consumption has dramatically responded to quality and promotional initiatives in recent years, which have helped make Brazil one of the world's major consumers of coffee. Moreover, increased internal consumption can improve familiarity with the characteristics of good coffee and contribute to improvements in production quality.

Market Information Systems

Information is the lifeblood of efficient agricultural markets. The availability of accurate price and other market information helps reduce risks and transaction costs and better enables market participants to plan and coordinate their production and trading activities. Market information is a public good and can be jump-started with public funds. However, around the world, many efforts to develop public sector Market Information Systems (MIS) have failed. Most MIS's have lacked commercial utility and have been unsustainable. To avoid the most common failure factors, four issues must be addressed:

- Ways and means are needed for private, non-governmental management.
- Cost recovery mechanisms must be devised.
- The systems must be established on a modest scope (at least initially).
- Finally, a participatory process is needed that is user-defined and incorporates feedback.

An excellent example of a sophisticated MIS is an evolving project developing information on "green" markets, run by Centro de Inteligencia Sobre Mercados Sostenibles (CIMS), based in San Jose, Costa Rica, under the aegis of the *Instituto Centroamericano de Administración de Empresas* - INCAE (e-mail: info@cims-la.com). All Central American countries can use this system. Simpler coffee-oriented systems could also be effective. Organizations like cooperatives and trade associations can be excellent conduits of specialized market information. Indeed, this is a significant service they can provide their constituents--but one that has proven difficult to manage and sustain without efficient organizations. Valuable market information is also passed through market alliances and is another reason to support integrated supply chain development.

For some producers, marketing efforts and value-added based on quality improvement are simply not viable options. For these producers, diversification away from coffee is a better choice. Such a strategy is examined in the next section.

IV. DIVERSIFICATION STRATEGY

The current coffee crisis in Central America is primarily an issue of improving the competitiveness of smallholder and medium size agricultural producers within the global economy. The agricultural sector represents an important pillar of the economy of Central American nations and the coffee sector is one of the most important components of the agricultural sector. The coffee sector, however, is a mature industry and will likely become more competitive and less profitable as time goes by. The heavy reliance of Central American economies on coffee renders them vulnerable to market downturns and the consolidation that will eventually occur in the industry. Non-competitive coffee farmers may have to switch, partially or totally, to other agricultural or non-agricultural enterprises for their livelihoods. Their farm laborers likewise will need to identify alternative livelihoods.

National policies should aim to help small farmer organizations identify and market higher quality and specialty coffees to the U.S., European, and Asian market, and help them diversify their export base. In addition, non-agricultural economic activities should be promoted in the rural sector. Some ideas include light industry, adventure tourism, social services (health, education, transportation), and technical training (mechanical, woodcraft, plumbing).

While there are strategies that could be taken by the coffee industry in Central America to improve on the current situation, these are unlikely to result in a quick recovery of world prices or farms' profitability. Under the circumstances, coffee producers have two options: to stay in the coffee business or to exit it. Those who stay can decide both to prune the trees and wait two to three years to see if the market recovers, and/or to increase the quality of their coffees. For those who decide to exit coffee production, options include selling or abandoning the farm, or diversifying into other crops or products.

This last option is what this study calls "diversification." This strategy is restricted to non-coffee agricultural diversification. It considers any agricultural activity or practical combination of activities not related to coffee production that will generate positive net income on the farm. For

non-competitive coffee producers, diversification could be a viable alternative to achieve economic sustainability in the medium to long run.*

The primary goal of diversification is to provide alternatives for those growers who will not be competitive in producing coffee---alternatives that will allow them to keep the farm as an agricultural enterprise. As a secondary goal, the alternatives should help make the growers self-sustaining, so they will not return to coffee when prices improve. Alternatives should also aim to employ displaced coffee labor and should favor land use practices and patterns that are both profitable and environmentally sustainable.

The dangers of unbalanced reliance of an economy on a few agricultural commodity crops has long been recognized and efforts for the diversification of agricultural economies are not new to Central America or to coffee growers. Over the last thirty years, many efforts for agricultural diversification have been made and have had varying degrees of success in the region. Nevertheless, some important diversification efforts have been made. Lessons learned from the implementation of those projects are summarized in box IV-1.

Box IV-1. Lessons Learned from Previous Diversification Efforts in Rural Central America

1. Improved *quality* of output is no less important than increases in *quantity* of output---and possibly more so.
2. Achieving quality-based competitiveness takes time. This process is greatly aided by partnerships and match-making arrangements with the private sector (including foreign firms). National institutions can offer support to farmers in the form of appropriate technologies, technical assistance, and financial and marketing services.
3. Experience in marketing new agricultural products domestically is often the first step in the successful development of export marketing.
4. Governments can support diversification by facilitating foreign and joint venture investments, as well as transfers of production and processing technologies from abroad.
5. Successful diversification programs that support sustained production and export expansion include new types of financial and marketing arrangements (such as joint ventures, vertical integration, and investment incentive programs). Public investments are also needed in human capital and support structures (education and health, water and sanitation, rural infrastructure, research and extension).
6. Successful diversification programs start by considering the agro-ecological characteristics of the areas to be diversified. Extensive market research and marketing planning of potentially successful crops are also needed before any crops are chosen.
7. One of the more successful approaches in diversifying agricultural capacity has been to add value to a crop that is familiar: one that has already been grown in the area and whose agricultural practices and post-harvest handling requirements are known to local producers. Adding value to the product may make it commercially successful, while increasing farmers' incomes.
8. Production, financing, processing, and marketing should be left to the private sector.
9. Farmers cannot assume all risks involved in the new crops. Incentives should exist for collaborative research/analysis, technical and marketing assistance, and to finance the setting up of production---but not for the production itself.

* The term "non-competitive" is used here to describe coffee farms that cannot compete in world markets, either because their cost structure does not allow them to be profitable by competing in the "exchange-grade" segment of the market or because of the agroclimatic conditions of their farms cannot produce coffees to compete in the "high quality" segment.

10. The public sector should focus its efforts on providing transportation and communications infrastructure, marketing infrastructure (such as auction/terminal markets and cold storage), standards and quality control services (such as product and factory inspection and certification), market information services, and new product market and trade promotion assistance.
11. Strong institutional capacity within cooperatives is crucial to the success of a diversification program. In general, private agribusiness firms have been more successful than cooperatives diversifying their production. The limited success of “campesino” farmer cooperatives could be attributed to a lack of flexibility, sophistication, and quick response, as well as excessive costs. When working with a perishable product, quick response is needed to correct problems and react to changes in the market. Cooperatives must arrive at consensus before responding to change, whereas individual entrepreneurs need only to make up their own minds.
12. Diversification initiatives have faced critical and sometimes insurmountable issues of sustainability at the farmer level. Farmer-centered research and extension is perhaps even more important for the adoption of appropriate sustainable farming methods by small farmers than the correct macroeconomic policies.
13. However, the correct macroeconomic policy environment is crucial for the sustainability of the entire diversification program.
14. Where diversification programs were successful in increasing agricultural exports, they were also successful in attracting foreign investment to the countries’ agricultural and food sectors.

Elements of a Diversification Strategy

Diversification is not easy, especially when it entails a movement away from a relatively nonperishable cash crop like coffee. Growers themselves, responding to market’s conditions and government’s incentives, will determine how much coffee should be phased out. Developing new niches with premium prices does not necessarily imply the phasing out of a part of current production. However, continued production by unprofitable producers or in inefficient coffee production areas should not be subsidized.

To be self-sustainable economically, socially, and environmentally, ideally alternatives should be labor-intensive and appropriate to farm conditions. They should utilize sustainable production practices. They should exploit profitable market options, and aim for long-term markets.

A diversification program for coffee growing areas must start by addressing particular farmer objectives defined according to local necessities: notably, income diversification, improved food safety, planting of other more profitable coffee varieties, or any combination. It must then help farmers assess these specific issues:

- Potential markets for different possible crops;
- Risk management;
- Barriers to entry (investment costs, infrastructure requirements);
- Necessary skills and resources (information, technical capacity, financing);
- Environmental and economic advantages for production; and
- Challenges pertaining to commercialization (logistics, quality, quantity).

Government-backed Initiatives

Development of strategy for agricultural diversification must follow a systematic approach, dealing with both the agricultural and business environment constraints at the same time. It should be consistent with the development of the rural economy as a whole. In analyzing the elements that have combined to make strong agricultural sectors in developed nations, several factors stand out:

Market research. Solid research is needed to identify markets and study demand for agricultural products in short supply, whether for domestic or export markets. Specialized organizations are often well suited to this task. An example is INCAE's new Centro de Inteligencia Sobre Mercados Sostenibles (CIMS).

Technical assistance. Appropriate integrated technical packages must be designed for products deemed promising (to address the agronomic, environmental, sanitary and phyto-sanitary problems, and quality requirements the farmer may face). This can be accomplished by a variety of partners, both governmental and non-governmental, in partnership with the private sector. Technical assistance could be offered through extension services managed and funded by local authorities, thereby ensuring their active participation.

Agricultural support services. The underpinning principles of an agricultural trade program must be built upon scientifically based sanitary (animal and human health) and phytosanitary (plant health) measures. Accordingly, it is essential for any program that supports trade in agricultural products to incorporate the principles set forth in the internationally recognized measures (or regulations) to protect human, animal or plant life or health: notably, the World Trade Organization Agreements on the application of Sanitary and Phytosanitary Measures and the Technical Barriers to Trade. The WTO signatories believe that trading rules based upon science and transparency will promote fair competition and provide predictable and growing access to markets.

Marketing and logistics. To facilitate the efficient commercialization of agricultural products, bottlenecks must be identified and solutions proposed and implemented. One arrangement that has considerable potential for raising incomes of small farmers is contract farming. Processors provide growers with credit and technical assistance, in exchange for delivery of a crop at a fixed price at the time of harvest.

Credit support. Targeted support programs can finance the investments needed to begin production. Some modest scheme may be necessary to support the individual producer's income temporarily during the unproductive phase. However, such support should be minimized and should not unduly distort the necessary market-oriented rationale for diversifying.

Community organizations. Locally based groups can support producer and/or trade organizations. These groups could gradually take over the processes discussed above and provide necessary linkages to markets.

Unfortunately, all these forms of support may not be in place or may not fall into place at the same time. The more factors that are present at a given moment, the greater the chances for a successful agricultural structure. Addressing one factor at a time will not move diversification along as fast as it needs to move to keep up with the changing trends and requirements of the markets for agricultural products.

Aside from socioeconomic factors, there are cultural factors to be considered as well. It may be difficult to convince coffee producers to produce something else. Generally speaking, producers have a long tradition of coffee production, which may be difficult to overcome. Any diversification strategy must consider this sort of resistance, and other such cultural aspects, when designing programs---especially for areas that cannot produce coffee competitively.

Not every farmer can be assisted with a non-coffee agricultural alternative. Other alternatives need to be considered for marginal farmers or those beyond the means of an agricultural solution. Those who face any or all of the following constraints: The slope of the land is too steep, or the soil is too thin and non-fertile. The farm size is too small, or the farm is too remote. There is not enough rain for rain-fed agriculture and no water for irrigation.

These growers may need to find employment in light industry associated with non-agricultural activities. All of these activities would require manufacturing in the production area or nearby, offering employment alternatives for displaced growers. Such a manufacturing base requires skilled labor. That labor should be trained, so it is ready to work once the industry is established.

For land that does not lend itself to any other agricultural pursuit and for important watersheds and forests, payments for environmental services may be a viable alternative livelihood, or at least a potential supplemental revenue stream from sound land use. Land can be set aside for forest preservation, for water and carbon sequestration, for public parks, or for other environmentally beneficial uses.

The next section examines environmental considerations in greater depth.

V. ENVIRONMENTAL CONSIDERATIONS

The traditional way of producing coffee in Central America, using naturally growing trees as shade, not only conserves soil and water like a forest, but also supports a variety of plants and animals and serves as a natural moderator of the microclimate. Over the past five decades, coffee production has intensified and “technified,” with the introduction of high yield varieties and the intensive use of agrochemicals, in an attempt to compete with low cost/high volume producers worldwide. In some cases, this has forced traditional coffee producers to cut down shade trees and abandon the biodiversity and the inter-mixed crops.

Site-specific environmental conditions, including soil and microclimate, determine whether the use of the new technologies of coffee varieties and agrochemicals is appropriate. In cases where the adoption of new varieties and agrochemicals were introduced as a “package,” without due regard for environmental sustainability, increased production was achieved. Unfortunately, however, the decision to “technify” production has sometimes been a “lose-lose” proposition;

new varieties and increased use of agrochemicals have not resulted in higher yields. The implementation of the new technologies has altered the natural ecosystem, forcing coffee producers to continually increase the amount of agrochemicals they use. These practices have not only been damaging to the environment, but have also undermined the cost-competitiveness of the coffee enterprises themselves.

Environmental issues in coffee production are common to all levels of technification, from small farmers using low-input traditional methods to large enterprises employing substantial amounts of inputs to achieve high yields.

General Environmental Considerations in Coffee Production

The main environmental considerations of coffee production, from cherry to roasted coffee, are the management of the coffee plantation, preservation of biodiversity, soil and water conservation, agrochemical use, and the consumption of water in the post-harvest processing. The most noticeable environmental problems are caused in these areas and are directly related to lack of environmental awareness and sustainability.

Farm management and land use. No matter the method used for coffee production, good management of the plantation is key, including:

- Appropriate use of agrochemicals for pests control (pesticides) and yield improvement (fertilizer);
- Maintaining not only the coffee plants, but the shade trees, and, using adequate types and densities;
- Conserving soil and water through erosion control with contour planting and appropriate ground cover;
- Managing waste on plantations, including recycling of residues (pulp, water).

However, small coffee producers have other priorities and pursue other activities. Accordingly, the effort seems to be focused on the harvest, more or less leaving the plantations to themselves the rest of the year.

Biodiversity. Traditional coffee plantations used to have levels of biodiversity similar to natural forests. As the amount of agrochemicals has increased with the “technification” of the coffee production, the natural levels of biodiversity have slowly disappeared. Preservation of biodiversity is a fundamental part of sustainability, as coverage provides shelter to animals and maintains the balance of pests and diseases found naturally in the ecosystem. The intensified coffee production, on the other hand, sees any crop apart from coffee as a potential competitor. In some cases, coffee is produced in areas better suited for other crops/forests, with negative consequences for biodiversity and the ecosystem.

Soil and water conservation. “Technified” coffee production with intensive use of agrochemicals leaves the soil in a state of ecological imbalance, lacking the capability to recycle the necessary nutrients and hampering the ability of the soil to contain water. Furthermore, the risk of erosion increases without sufficient groundcover to hold soil and help water infiltrate to the aquifer and keep the soil moist. Given the fact that coffee is often cultivated on slopes, there is an even higher risk of losing the top fertile layer of humus, which is essential for the quality of the coffee.

Use of water. Wet milling coffee requires large amounts of water (200-500 liters to produce 46 kg of green beans). The process is the same whether it takes place in big mills or by individual coffee farmers. Given the large amounts of water used, mills tend to be situated near a river (and in some cases in the river). Water used in the milling process is highly contaminating, containing sugar from the pulp and residuals from the fermentation. Discharging the water directly in the stream or river not only pollutes the water, destroying aquatic flora and fauna as well as the surroundings, but also contaminates the drinking water for communities downstream. During the peak of the harvest, the individual farmer re-uses water to speed up the fermentation process of the next lot. However, recycling fermentation water can affect the quality of the coffee.

Environmental Problems Arising from the Coffee Crisis

Environmental issues are the last priority to many farmers struggling to cope with the coffee price crisis. Existing environmental problems have worsened. Meanwhile, some new environmentally related problems have intensified, such as destruction of shade forest---followed by decreasing biodiversity---and destruction of ecosystems and natural habitats. Some of the key environmental problems arising from the crisis are the following:

Abandoning the farm, or growing new crops instead of coffee. The low price of coffee especially pressures small farmers to grow other crops to supplement or substitute for coffee, in order to survive. The new crops might not be adequate for the soils and slopes in the coffee regions, and introducing the inadequate crops could cause serious erosion problems. Furthermore, abandoning the coffee plantation and leaving cherries unharvested can cause serious plagues and infestations of pests the following year, making it difficult to reinitiate any agricultural production.

Destroying the shade forest. The coffee crisis drives traditional coffee producers to cut down and sell the shade forest as timber or firewood. Introducing new crops as a substitute for coffee can provoke clearing of the coffee plants and surrounding areas, using slash and burn techniques.

Limited implementation of cleaner technology. Over the past years, an increasing number of wet mills have implemented water and energy saving measures, and promoted their mills as environmentally friendly or certified. The coffee crisis will prevent new mills from implementing such measures.

Environmental Aspects of Strategies to Ameliorate the Coffee Crisis

In deciding whether to pursue a strategy of quality improvement or diversification, producers make an indirect choice regarding the impact in the environment. It is difficult to determine the precise impacts of each strategy, whether positive or negative. Some potential linkages between quality, diversification and the environment are discussed below.

Environmental Impacts of a Quality Improvement Strategy

- *Biodiversity.* Aiming toward specialty coffees entails managing the shade forest and taking a proactive approach to improve biodiversity and the ecosystem, as well as soil and water conservation. Apart from benefiting the environment, the strategy can yield economic

benefits to the producer if it opens access to markets selling environmentally friendly products, at premium prices.

- *Implementation of cleaner technology.* Water-saving and recycling measures implemented in both large and individual mills can indirectly be linked to quality management.
- *Farm management.* Good management procedures include erosion control, the sound use of agrochemicals, and shade and waste management, along with the use of resistant varieties, harvesting of ripe cherries, and proper preparation and cleaning of the plantation after the harvest. A well-managed plantation from the environmental perspective has direct positive linkages with quality: for example, through the prevention of defects and uniformity of the harvested cherries.
- *Organic coffee.* Organic coffee production involves several activities with positive impacts on the environment. Decreasing the use of agrochemicals and focusing on shade management increases the level of biodiversity. Moreover, it increases the environmental awareness of the consumer.
- *Knowledge and information.* Improvement of coffee quality requires knowledge and information. This can be provided through technical assistance to the small coffee producer in remote areas, and could be offered through NGOs and other scientific institutions conducting research in coffee production.

Environmental Impacts of a Diversification Strategy

- *Biodiversity.* The biggest negative impact of diversification into other crops or non-agricultural activities includes the possibility of destroying the existing shade forest. The clearing of land to develop non-agricultural activities will have a negative effect on the ecosystem, biodiversity, and soil and water conservation, if the necessary measures are not taken. An environmental impact assessment in every case can assure that only activities with *no* negative environmental impacts will be implemented.
- *Agroecological conditions.* Crops intermixed with coffee and/or new crops might not be adequate for agroecological conditions, potentially causing negative environmental impacts.
- *Technical assistance.* Access to technical assistance is the key element to make a qualified decision as to introduce new crops or other non-agricultural activities. This is especially true when diversifying into crops that are less known by the farmers.

Including Mid-size and Large Farms and Farm Workers in Sustainable Coffee Programs

There are important reasons for including mid-size and large farms in sustainable coffee programs. The participation of mid-size and large producers is essential to any rural development plan or landscape-level conservation initiative. Some of the mid-size and estate farmers have important marketing contacts, skills, and experience. Small, neighboring farmers can ride their coattails into premium markets.

Finally, rural development programs will not be equitable or successful if they do not include farm laborers, especially migratory and seasonal workers---perhaps the most neglected and

disenfranchised sector in the region. In fact, smallholders, no matter how poor, have more options and support than the landless poor who work seasonally on the farms of others.

This document now turns to an examination of the institutional and incentives framework needed to support the competitive transition of the coffee sector.

VI. INSTITUTIONAL AND INCENTIVES FRAMEWORK

Since the 1990s, the global coffee sector has undergone important structural changes. These changes will shape the course of the industry during the next decade and beyond. To support the industry in the future, coffee institutions in Central America need to revise their role and strategies and help identify new opportunities.

From ministries and national coffee institutes and councils to private associations, research and extension institutes, to NGOs and regional entities, many institutions and organizations operate in the coffee sector in Central America. Private sector groups also play an important role in such areas as banking, technology transfer, and market information.

Clear differences in the scope and strength of institutions exist in Central America. Some countries have strong institutional capacity with clear strategies and well-defined technical, social, and economic programs; others have public institutions with well-defined roles but weak institutional capacity. In many countries, fragmented producer associations contrast with strong milling and exporter associations. Some countries suffer from an absence of cohesive national coffee policies and strategies to guide and regulate the large number of institutions serving the coffee industry.

The objective of this section is *not* to present an exhaustive review of the performance of coffee institutions and organizations in the past. Rather, the approach is forward-looking: to identify areas where these entities can play a key role in facilitating a competitive transition for the coffee sector and sustainable development of the rural economy. The section concentrates on three areas. First, it considers how institutions and organizations can support the development and competitiveness of quality coffee. A special focus is on appropriate trade policy. Second, it examines credit and banking services to competitive producers. Third, it considers ways to reduce social vulnerability. In particular, social protection for poor producers and laborers, and others in the rural economy, and risk insurance mechanisms for small coffee producers, are examined.

Supporting the Competitiveness of Quality Coffee

The role of national ministries, coffee institutes, councils, and associations in supporting quality begins with definition of, and consensus about, a strategy. Coordinated measures will reflect a combination of social priorities, economic capacity, and political resolve. These must be harnessed in long-term programs that produce some clear results in the short term.

Interventions could include:

- *Defining standards and incentives for quality production and competitiveness.* Identifying, assessing, and supporting production of quality coffee requires, first and foremost, reaching consensus among the key coffee institutions on what quality coffee means. This can include the legal recognition of market-defined norms and standards. Once quality is defined, it can be followed with institutional support to the competitive production and processing of quality coffee. Establishing and putting in place the right incentives for quality recognition at the different stages of the production chain will motivate better quality production.
- *Promoting quality certification.* In the long run, support can be extended to creating a credible, impartial, and independent system for quality certification: one that responds to market requirements with respect to taste and environmental and social concerns of consumers. Other incentives that promote production and consumption of quality coffee in the domestic market can be implemented. A positive example is Brazil. Its certification programs have promoted domestic consumption while improving quality.
- *Supporting the organization and consolidation of smallholder production.* Institutions can help support the consolidation and integration of the coffee industry, especially by working with small and medium producers to enable them to achieve better economies of scale, adequate volume, improved quality control, and higher market access.
- *Providing technical assistance and research and extension services* to coffee producers and millers. This can be a key element for empowering smallholders and enhancing quality. Support can be pursued in two areas: adopting best practices for quality production and prevention of defects, and capacity building for quality measurement, through cupping and physical evaluation. Entities such as IICA, CATIE, CIRAD, the regional coffee institute PROMECAFE, national coffee associations and institutes, and NGOs have been working in these areas, in addition to independent experts.
- *Building partnerships.* National institutions and privately held associations have developed alliances with national and global organizations. These vary in purpose and focus, although all aim to provide better services and secure higher incomes for their members and for the coffee industry in general. For example, ANACAFE, IHCAFE, and ICAFE have undertaken individual arrangements with financial institutions to provide technical assistance required for credit to members. Coffee associations and the Specialty Coffee Association of America (SCAA) have signed letters of understanding for training and assistance.
- *Improving market access.* Partnership building is also important for improving market access. For example, cooperative associations have negotiated quotas for members' coffee in higher-priced alternative markets such as Fair Trade, as well as long-term contracts with roasters, guaranteeing the use of their members' coffee in the roasters' blends and brands. The development of a legal framework in which international coffee contracting laws can be sustained can both facilitate and encourage the development of long-term contracts, and secure partnerships between sellers and buyers under which both parties can be sure of performance. Other steps could include developing market information systems for coffee

producers regarding prices and potential markets, and facilitating technical assistance for brand development, partnership building, and market access.

Promoting the competitiveness of coffee also includes defining and implementing adequate trade policies and incentives for market outreach. The indirect effect of higher competitiveness and improved production and certification mechanisms will be higher quality product; this, in turn, could increase demand. Starting from the Central America region, greater openness in the coffee trade could encourage national industries to improve, forcing non-competitive suppliers---which are typically protected----to exit and shift to other sectors.

Trade Policy

Trade barriers directly impact the competitiveness of coffee and indirectly undermine the potential of quality improvement. Traditionally, coffee has suffered discrimination in trade and exchange policies. The current policy framework has been improved by policy reforms, particularly in the 1990s, but important issues still remain (see table VI-1).

The region is still feeling the effects of export quotas established by the International Coffee Organization, which required strong intervention of the coffee markets at the time of their implementation. The export quotas were discontinued in 1989. Central American countries have had an asymmetrical treatment of imports and exports. While imports were typically protected, exports were subject to discrimination. As part of this asymmetric treatment, coffee has been traditionally discriminated by trade and exchange policies, resulting in many cases in a negative rate of protection.

Complex export procedures and taxation schemes act as disincentives for quality production and the quality coffee competitiveness and profitability. It is important to revise and correct policies that reduce the competitiveness and profitability of Central American coffee exports. Policies may include: defining region-wide standards and protocols that establish criteria for the recognition of coffee regions (such as Antigua coffee); extending tax incentives for importing technology and operating environmentally friendly coffee processing technologies; eliminating remaining export taxes for coffee; and reducing transaction costs by streamlining exporting procedures.

Coffee should receive at least the same free trade status as firms in free zones, which are routinely granted exemption from tariffs, export taxes, and other trade taxes, and benefit from expedited customs procedures. These are not subsidies; they are necessary to grant the firms free trade status, allowing them to compete against firms in foreign countries. These preferences can be granted to coffee exports. At the World Trade Organization ministerial meeting in Doha, Qatar, in November 2001, Central American countries, among others, fought for and obtained an extension of the period for which subsidies to firms operating out of free trade zones will be allowed.

Finally, it is important to include coffee in trade negotiations, especially in new markets and internal Latin American markets. Import tariffs on coffee from countries in the region must be revised. Lower tariffs are related with higher competitiveness, larger profits and, potentially, quality increases.

Table VI-1. Coffee Trade Policies in Central America

Issue	Implication
Coffee was excluded from free trade in the Central America Common Market Agreement signed in 1960.	Domestic coffee markets are small, and coffee firms do not have the possibility of benefiting from the larger Central American market envisioned in the customs union agreement. Inter-regional coffee trade is treated as third country imports, restricting coffee trade and investment in the region. This also restricts coordinated region-wide responses to the coffee crisis.
Nations collect export taxes and charges for coffee institutes and coffee funds. Foreign exchange earnings are surrendered at official rates.	The taxes and charges and the exchange rate penalty reduce price-competitiveness. The tax and charges reaches an annual amount of US\$25 million for the whole region. Collection of these charges introduces additional transaction costs for regulatory compliance, reducing cost-competitiveness. Rather than the existing practice of discrimination, the environmental benefits of coffee farming (carbon sequestration, water flow regulation, erosion abatement) justify subsidies.
Exporter registration and bonding requirements. Requirement to present export contracts to government institutions before shipment. Export certificate are also required, as well as a central bank export permit for each shipment.	Barriers to entry are erected and transactions costs are considerable. These are somewhat diminished through “one stop export shops,” but are nonetheless significant. This tends to concentrate the players and increase the bargaining position of traders and exporters who are already in the export and trading business, further restricting farmers’ share in the value of their product.
National export quotas were prevalent in previous ICO agreements. The current ICO does not include quotas.	However, those quotas left a legacy, which includes coffee laws, and quasi-public agencies, which administered these quotas, among other responsibilities. These organizations concentrated on taxation and burdensome regulations and did not pay enough attention to trade promotion, trade facilitation, and quality enhancement.
All these trade controls, largely without constructive purpose, exist in an industry largely made up of poor farmers, who are unable to withstand price or weather crises, and who still must realize quality improvements.	Coffee agencies and councils should refrain from interfering in trade regulation, collect their fees before the export stage and with a minimum distortion effect on the market (particularly separating the funding requirement from export regulatory requirement and burdensome transaction cost).

Providing Credit and Banking Services to Competitive Quality Producers

The crisis in coffee prices has severely affected the banking sector. Several banks in the region have already failed, and a number of countries are looking for ways to restructure bank balance sheets to allow continued lending. The dominant philosophy seems to be to find measures to prevent large-scale take-over of farms by banks.

The most immediate response has been to withdraw credit to the coffee sector, particularly producers. Banks and rural financial institutions are not willing to extend new credit to the coffee sector as long as prices remain depressed and old debts are not cleared. For this reason, agricultural producers have turned to informal credit sources such as suppliers of agricultural inputs or coffee intermediaries, with correspondingly stricter conditions and higher interest rates.

While supporting the financial sector, national public institutions are working to define alternatives for producers and millers with severe debts and working capital requirements. With coffee emergency funds already exhausted, arrangements in several countries involve longer-term restructuring of commercial bank loans, by transferring them to trust funds. In return for the transfers, banks receive government bonds to be revalued in their balance sheets. While retaining ultimate liability for their individual components of the fund, they take write-offs against reserves at a very slow rate, or when the payer does finally default. Schemes like these have been designed to solve short-term problems, but do not address the consequences of extended periods of low prices, starting with the next crop.

The situation in the banking sector is evidence of clear market failures in the system. The formal financial sector does not have an adequate risk model to evaluate credit-worthiness in the agricultural sector, and has difficulties in predicting sectoral slowdowns and in forecasting commodity prices.

The market failure has been traced to asymmetry of information, lack of adequate guarantees, unfamiliarity with rural production needs and seasonality, and perceived low internal rates of return (Marlunda Consultores 2000, 2001). Against this background, it is important to develop appropriate coverage mechanisms that differentiate between market risks (involving output, prices, and quality) and financial risks (rates of interest, liquidity, and rate of exchange). Developing incentives to stimulate the financial sector's involvement in agricultural projects is also required.

Regional banks are examining and putting in place special borrowing conditions that include a pre-agreed schedule for sales and forward contracting that ensures that all coffee prices are fixed before the end of the season. Borrowing and debt restructuring for coffee producers and millers should also be aligned with long-term economically sustainable programs such as renovation projects, and quality and marketing initiatives for improving exportable coffees. Ideally, these should be linked with technical assistance components. Implementing and providing access to risk-management instruments and hedging products to the sector, including to small producers, will help both lenders and creditors reduce the uncertainty of income streams and thus in debt repayment.

Reducing Vulnerability

A third area of institutional and organizational support is reducing social vulnerability, in both the short and long term. To assist coffee producers, workers, and their families, better social protection is needed (particularly short-term actions). To protect small coffee producers vulnerable to price shifts, risk insurance mechanisms and similar instruments need to be developed.

Production decisions at the farm level are directly influenced by price shifts. The current crisis has brought many consequences in terms of investment, employment, and production, which are directly linked to vulnerability. Recent studies conducted in Nicaragua and El Salvador to assess producers responses to low prices and risk perceptions indicated that the immediate responses is

to reduce costs, particularly of labor and inputs. The likelihood of reducing labor increases significantly with the farm size (World Bank 2001, 2002). Farmers' willingness to harvest all the coffee from the fields suggests that they are paying only for one cut of coffee, instead of financing additional cuts for ripe cherries.

Most farm households also reduce their short-term consumption. Small farmers, more than others, increase informal borrowing and become especially vulnerable to loss of other employment. Almost all producers, regardless of size, ranked coffee price shifts as the most important risk they faced.

Social vulnerability and the institutional response

Historically, when governments have attempted to respond to a "coffee crisis," they have focused attention on coffee producers: notably those with outstanding loans, which are typically medium and large coffee producers. Sometimes, small producers have also benefited from government assistance. An example is a current program in Mexico to compensate small coffee producers for low prices.

Coffee laborers have not tended to benefit from direct government assistance. Large proportions of coffee laborers are classified as "poor" by various poverty assessments. Indeed, coffee laborers tend to be overlooked. This is important because, in times of economic crises, medium and large coffee producers tend to cut back on their use of purchased inputs and labor. With less demand for labor, wages tend to fall. This can have serious negative impacts on poor coffee laborers, a large proportion of who are also small producers.

Since many small coffee producers and laborers also cultivate staple foods for home consumption, any concurrent weather-related risks, such as drought, can exacerbate the negative welfare impacts of low coffee prices. This is currently the case in many Central American countries, where yield losses from drought are compounding the downside shock on small coffee producers and laborers.

Moreover, others in the rural economy---including coffee input suppliers, processors, and providers of household goods and services---are also impacted by low coffee prices and low coffee-related incomes. Like coffee laborers, they also do not tend to benefit from any direct government assistance in time of crisis.

Recognizing these problems and making them visible to governments is an important first step in suggesting any possible social protection strategies and options. Additional institutional responses to address social vulnerability can include:

- *Providing assistance to unemployed coffee workers and their families.* Nicaragua offers an example. A work-for-food program has been recently set up in partnership with coffee producers. Participants are employed on private coffee farms and receive partial payment from owners; food allotments to make up the difference. The reduced wages allows coffee producers to employ more laborers than they could have otherwise in this crisis situation. This program aims to help both coffee laborers and larger producers.

- *Improving safety net programs.* There is a need for safety net programs for coffee laborers, small producers, and others in the rural economy: both targeted and self-targeted programs. These programs could include food aid, food-for-work, and temporary employment. They should also include assistance for families and children. Such programs will require a case-by-case analysis in different countries and regions, and where possible should be mainstreamed into existing safety net programs for the rural poor. A key issue in the design of safety nets will be the fact that many coffee laborers are seasonal migrants. This can make geographic targeting difficult.
- *Assisting coffee laborers and small producers in skills development and training* to improve their mobility, either within or beyond the coffee sector. The high supply of unskilled rural labor puts downward pressure on wages; skills development can offset this. Moreover, laborers will probably need new skills as part of the process of diversification.
- *Promoting the use of price risk management instruments.* To provide unemployment insurance to laborers and/or to fund alternative employment, medium and large producers could be given incentives to use instruments such as commodity price insurance. Possibilities could also be explored for governments to use price risk management instruments to help fund safety net programs for coffee laborers and others.
- *Providing assistance to link the laborers' associations with the producers' associations* to help identify common issues and capabilities to respond better to crises.

Managing price risk and volatility

Coffee farmers face at least two distinct sets of problems associated with prices: the outright price level, and volatility. Coffee prices have been the most volatile of all commodity prices. Price volatility was particularly pronounced during the 1990s, and is expected to continue, together with the downward tendency in coffee prices. Volatility is the result of an inelastic demand curve and supply shocks, mainly caused by past production disruptions in Brazil (mainly because of frosts), production adjustments in response to price increases, and policy changes (such as the suspension of the economic clauses of the International Coffee Agreement).

Cyclical price volatility, particularly within the crop season, can be dealt with through price risk management instruments. However, the secular price trend requires other longer-term elements, such as diversification or improvements in quality and productivity.

Speculative behavior also needs to be addressed. This was one of the sources of the banking problem. In the past, many farmers chose not to fix coffee prices, even after their crop was exported; rather, they retained futures-linked positions with exporters. The lack of coverage in a period of decreasing prices led to the reduction in their ability to repay their loans.

Tools to manage price volatility already exist. However, small and medium-size agricultural producers in developing countries are, in general, unable to access them. Impediments to their use by producers include inappropriate instruments to suit their needs, high transaction costs, and

little understanding of their use. Additionally, in the developed world, many producers frequently do not access risk management instruments directly. Some options to manage lower and volatile prices are described below.

Lower-scale risk management instruments

Ways in which coffee producers can get access to risk management markets are the focus of studies underway in El Salvador and Nicaragua. Two key issues are to develop competent aggregators of risk management instruments, and to examine ways in which risk management instruments can help unlock access to credit. Local aggregators for demand for risk management instruments could be producer organizations, cooperatives, rural credit institutions, and traders. Preliminary results indicate that it is critical to strengthen the capacity of producer organizations and cooperatives to deal with price risks and improve their marketing of coffee. Approaches being explored are:

- *Attaching price insurance to a loan agreement.* A farmer who borrows with price insurance should be a better credit risk than one who borrows without it. From the perspective of the lender, a portfolio of debt that is insured should strengthen the lending institution. It should also improve the flow of credit for farmers who agree to buy price insurance. This arrangement may be useful to countries seeking to improve the flow of credit to coffee (and other agricultural) sectors.
- *Adopting sales management techniques,* such as hedging strategies, for cooperatives that manage sales on behalf of their members. These techniques could have a double benefit. They enable a cooperative to pay a higher proportion of the market value of the coffee to a producer. They also protect the ability of the cooperative to make payments in the future.
- *Using inventory management.* Cooperatives and other producer organizations may not wish to sell all their coffee immediately after harvest. This way, they can spread their sales more evenly throughout the crop year and take advantage of price rises later on. This provides a level of flexibility in selling. Price risk management would allow producers to protect the value of their inventories from unexpected price declines during the crop year.
- *Aggregating crops,* so even farmers with a relatively small quantity of a commodity can enter into purchase contracts. Grain elevators and crushing plants are useful in this regard. Tools like this have arisen in developed countries, along with sophisticated purchasing contracts that have risk management tools embedded in them. Entities able to provide this type of purchasing arrangement rarely exist in the developing world. The potential for developing them needs to be discussed.
- *Using guarantee contracts.* There are arrangements in place between farmer organizations and users that provide price protection to these farmers; Fair Trade is one of them. Fair Trade guarantees a price to farmers that is not only higher (around \$1.20 – to \$1.30 per lb., when prices are \$0.50 to \$0.60 per lb.) but also fixed. This is another effective way to provide price protection to coffee producers.

Programs should be linked to technical assistance packages designed to assist farmers in understanding the role and operation of forward and physical markets, as well as the positive impact of price risk management instruments.

Other risk management instruments

Weather risk management. Weather often has an impact on coffee yields. Recent developments in weather-based insurance could allow producers to obtain protection against severe weather events such as hurricanes, mud slides, excess rain, or drought. Weather-based index insurance is based on the occurrence of a certain event that can be measured and verified independently. This lowers administrative costs and reduces the usual moral hazard and adverse selection problems often associated with traditional crop insurance.

Risk management and environmental sustainability. Sustainable production methods incorporating soil management and localized input methods can also provide useful risk management support, especially for poor rural smallholders. These methods diminish costly dependence on agrochemicals, reduce the impacts of drought, and encourage on-farm diversification for food security and income protection.

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